

APPENDICES

Appendix A - Excerpt from Memorandum of Agreement Between NC Department of Environment and Natural Resources (DENR) and NC Department of Health and Human Services (DHHS)

Principles of Agreement

Both parties agree to coordinate and collaborate on the protection of important natural resources in the School for the Deaf Watershed, and on the development of an environmental education facility to all North Carolina's citizens.

DHHS further agrees:

- 1) To transfer the School for the Deaf Watershed property to DENR, in accordance with established procedures for the reallocation of state property;
- 2) To contribute their expertise and knowledge of accessibility standards and needs to DENR's design and operation of a year-round, residential environmental education facility;
- 3) To assist in obtaining funds for the development of the environmental education facility, particularly from federal grants for which DHHS is eligible;
- 4) To provide two management positions for educational support designated from the Office of Education Services.

DENR further agrees:

- 1) To protect and manage the School for the Deaf Watershed property as a part of South Mountains State Park;
- 2) To design a fully accessible, year-round, residential environmental education facility which is financially and environmentally feasible to construct and operate. The facility will be located on the western side of South Mountains State Park;
- 3) To incorporate the design ideas and suggestions of DHHS within the constraints of funding, the environmental features of the site, and the mission of the state parks system;
- 4) To place priority on obtaining funds for construction of the facility, in conjunction with DHHS's ability to obtain matching funds;
- 5) To solicit and consider input from DHHS in the development of operating, scheduling, and programming policies for the facility.

Appendix B - Summary of Comments on Draft Master Plan

Public Comments in Response to Public Meeting and internet posting of draft Master Plan in May 2007

Comment sheets received:	25 (21 returned at meeting; 4 mailed in)
E-mails received:	59
<i>Total Responses</i>	<i>84</i>

Subject	Responses
General Comments	10*
Clear Creek/Walker Perry Road Access	8, plus petition with 33 signatures
Fishing	1
Hiking Trails	5
Equestrian Trails	17
Mountain Bike Trails	45
Other	2

**Some respondents mentioned more than one subject in their general comments.*

General Comments 10 responses (7 comment sheets, 3 e-mails)

- Provide ways to bring children and families back to nature.
- Plan allows families to "stay close to the car" and near the park entrances.
- Consider changing "South Mountain Park Avenue" to a "road" designation.
- Work with NC Wildlife Resources on non-hunting uses of South Mountains Game Lands.
- Boy and Girl Scouts used to use shed for weekend campouts.
- Add lights for deaf, education classroom like Lowe Sanctuary in Nebraska, picnic shelter for up to 50 people, climbing skills, boating.
- Will Clear Creek cabins and amphitheater be available for rental?
- In favor of the proposed Clear Creek improvements to serve the people of Rutherford County and other areas west of the Park (including tourists).

- Keep park development at the outer margins and leave the interior as pristine as possible.
- Provide a backcountry hut system.

Access to Clear Creek Section/Walker Perry Road Entrance

8 responses (4 comment sheets, 4 e-mails, and 1 e-mail attachment of a petition with 33 signatures opposing the access road)

All respondents, plus 33 people who signed a petition, were opposed to using Walker Perry Road as a new connector to South Mountains State Park. Concerns included increased traffic, dust, trash, strangers, noise, safety of children, increased taxes, and diminished property values. The properties of many respondents have been in their families for generations. Some feel that a third entrance to South Mountains State Park is not necessary, or that Roper Hollow Road or Jenkins Road/Clark Loop can be used.

Fishing *1 e-mail*

One response in favor of better access to Henry's Fork for fishing.

Hiking *5 responses (4 comment sheets, 1 e-mail)*

- Keep hiking trails separate from equestrian and biking trails.
- Keep picnic areas separate from quieter hiking and primitive camping areas.
- Consider erosion issues when trails are used by equestrians and cyclists.
- Improve trail hiking map and color code the trails.
- Keep Clear Creek for hikers only.
- Establish a trail from Clear Creek side to Jacob Fork side.
- Work with Burke County to do a greenway from South Mountains State Park to US 64 with a parking lot at 64 so people can walk in and out.

Equestrians *17 responses (12 comment sheets, 5 e-mails)*

Other than the comments above which addressed keeping hiking trails separate from equestrian use and expressing erosion control

issues, all 17 comments on this subject, most of which were from equestrian groups, were in favor of development and expansion of equestrian trails and facilities into the Clear Creek area, and some respondents advocating extending them into all areas of the park.

Some comments included praise for the existing equestrian facility and extending the bridle trail into the Jacob Fork section. Other comments included:

- Don't put a dump station in the equestrian parking lot.
- What have we learned from the 2004 landslide and 9 month park closure and how is that fitting into the master plan?
- Put tie-ups, picnic tables, and port-a-johns along the equestrian trails.
- Differentiate levels of trails – easy, moderate, difficult.
- Will horses be allowed on the game lands?
- Put combination lock on gates and give number to equestrians for emergencies.
- Turn existing road beds into trails.
- Provide more horse trailer access.
- Purchase Pine Mountain lots along Dogwood Trail to keep road "wild" on both sides.
- Install water and power at every camp site. No one uses tents anymore; horse trailers are now self-contained with living quarters.
- Provide a waste dump station for campers to dump their holding tanks.
- Provide ice every afternoon at 6:00 p.m. for campers. This would cut back on traffic flow to local stores miles away.
- The trail system should allow more than one-way in and out. A new trail located out the back side of the camp ground would be great.
- When will proposed access trail from equestrian campground to Pine Mountain Resort be finished?
- Provide a parking lot suitable for about 12 horse trailers in the Highway 64 area with easy access away from the camping/picnicking areas but very accessible to the CCC road and trails already being ridden.

Mountain Bikes 45 e-mails

Other than the comments under “Hiking Trails” which addressed keeping hiking trails separate from biking use and expressing erosion control issues, these 45 comments were in favor of biking trails. Most of the comments were from organized groups or from bike trail facilitators. Many of the comments were similar to these:

- Make the trails multi-use or “single track”, to be used by both hikers and bikers.
- Provide challenging grades.
- Provide another “biking destination” in NC that is a little closer to the center of the state.
- Off-road cyclists are a growing demographic and would bring a large user base to South Mountains State Park and help the economy.
- Consider using one of the organizations that hold trail-building clinics and assist in designing, building and maintaining single-track trails in North Carolina. A clinic was held at Lake Norman State Park.
- Single track trails are typically built and maintained with volunteer labor supplied by local mountain bike clubs.
- Funds may be available through “Clean Water” or other funding.
- Bike trails cause less erosion than equestrian trails.

Other 2 responses (1 comment sheet, 1 e-mail)

- Include an off-road vehicle trail on the old CCC road connecting Watershed Rd. and Roper Hollow., developed in a regulated and environmentally friendly way, with primitive camping facilities.
- Provide areas for hunting with a permit system to allow limited opportunities, especially in the areas away from hiking and horse trails.

Comments from NC State Clearinghouse on Draft Master Plan

In order to identify important issues early in the environmental review process, the Natural Resources Program circulated a scoping letter through the NC State Clearinghouse that requested comments on pertinent regulatory and resource protection issues. We received comments from the NC Natural Heritage Program (NHP) and request that these be included in Appendix A. The NHP noted:

1. Appreciation that none of the facilities are sited within Significant Natural Heritage Areas or the Dedicated Nature Preserve.
2. Concerns over important bat habitat and the bat species documented from the proposed camping loop on the Jacob Fork area. (These species include the Rafinesque’s Big-eared Bat, which is federally-listed as a Species of Special Concern; Silver-haired Bat, which is state-listed as Significantly rare; Hoary Bat, which is state-listed as Significantly rare; and the Northern long-eared *Myotis*, which is state listed as Special Concern). NHP requested survey of the bats and habitat in the area and that extra care be taken to study the compatibility of placing a camping area in this area.
3. Concern about siting a maintenance area close to the river. Would this increase the risk of fuel spills or effluent tanks getting into the river? How wide and intact will the buffer between the river and the maintenance area be?
4. Concern about presence of wetland habitat and potential impacts from crossings.

Comments from US Fish and Wildlife Service on Draft Master Plan

1. *Rare Species*: If it is determined that any proposed activities may adversely affect any species federally-listed as endangered or threatened, formal consultation with the US Fish and Wildlife Service must be initiated. Although federal species of concern such as the Rafinesque’s big-eared bat are not subject to the provisions of the Endangered Species Act, the US Fish and Wildlife Service has included them in its response with a request to protect them.

2. *Erosion Control and Wetland/Stream Protection*: The Service's principal concern is the potential impacts to wetlands and streams. It strongly prefers that the equestrian trail be routed through the existing equestrian campground and that stream crossings be routed to existing bridges. Other alternatives - new bridges or in-stream fords - are considerably more environmentally damaging. The Service prefers Alternative 1 (the land-dependent Tent and Trailer Campground) for the tent and trailer campgrounds at Jacob Fork because it will not involve a new crossing of the Jacob Fork or the three tributaries in the area.

3. *Storm water*: The expansion will create more impervious surfaces, which collect more pollutants and quickly transmit them to receiving waters. This nonpoint source pollution is one of the major threats to water quality in the United States. Best management practices can reduce, but not eliminate, pollutant loadings of common storm water pollutants. The NC Wildlife Resources Commission has developed a "Guidance Memorandum to Address and Mitigate Secondary and Cumulative Impacts to Aquatic and Terrestrial Wildlife Resources and Water Quality" that we support and encourage you to use. It is available at: http://www.ncwildlife.org/pg07_wildlifespeciescon/pg7c3_impacts.pdf

4. *Recommendations for addressing impacts associated with this project*:

- Use on-site storm water management (i.e., bioretention areas) that result in no net change to watershed hydrology. All storm water outlets should drain through a vegetated upland prior to reaching any stream or wetland.

- Preserve or restore forested riparian buffers. Because of the aquatic resources in the project area, forested riparian buffers should be created or protected for a minimum of 100-feet wide along perennial streams and 50-feet wide along intermittent streams.

- Install and maintain stringent measures to control erosion and sediment and to prevent unnecessary impacts to aquatic resources within and downstream of the project site.

- Use bridges for all permanent roadway crossings of streams and associated wetlands. We recommend the use of spanning structures because they minimize impacts to aquatic resources. All wetland/stream crossings should be made perpendicular to the stream. If culverts are used, arched culverts are preferred; however, any type of culvert that is used should allow for the passage of aquatic life. We recommend the use of multiple barrels (other than the base-flow barrel), placed on or near stream bank-full or floodplain bench elevation, in order to accommodate floodwaters within the stream corridor.

- Install utility lines and infrastructure outside the above-recommended riparian buffers. Crossings should be kept to a minimum, and should be near perpendicular to stream flow.

- Directional boring beneath streambeds should be used for utility crossings.

- Keep equipment out of streams by operating from the banks in a fashion that minimizes disturbance to woody vegetation.

- Avoid the complete clearing of land. If clearing is necessary, efforts should be made to avoid the removal of large trees at the edges of construction corridors.

Appendix C - State Parks Act (North Carolina General Statutes - ARTICLE 2C)

§ 113-44.7. Short title.

This Article shall be known as the State Parks Act. (1987, c. 243.)

§ 113-44.8. Declaration of policy and purpose.

- (a) The State of North Carolina offers unique archaeological, geologic, biological, scenic, and recreational resources. These resources are part of the heritage of the people of this State. The heritage of a people should be preserved and managed by those people for their use and for the use of their visitors and descendants.
- (b) The General Assembly finds it appropriate to establish the State Parks System. This system shall consist of parks which include representative examples of the resources sought to be preserved by this Article, together with such surrounding lands as may be appropriate. Park lands are to be used by the people of this State and their visitors in order to promote understanding of and pride in the natural heritage of this State.
- (c) The tax dollars of the people of the State should be expended in an efficient and effective manner for the purpose of assuring that the State Parks System is adequate to accomplish the goals as defined in this Article.
- (d) The purpose of this Article is to establish methods and principles for the planned acquisition, development, and operation of State parks. (1987, c. 243.)

§ 113-44.9. Definitions.

As used in this Article, unless the context requires otherwise:

- (1) "Department" means the Department of Environment and Natural Resources.
- (2) "Park" means any tract of land or body of water comprising part of the State Parks System under this Article, including existing State parks, State natural areas, State recreation areas, State trails, State rivers, and State lakes.
- (3) "Plan" means State Parks System Plan.
- (4) "Secretary" means the Secretary of Environment and Natural Resources.
- (5) "State Parks System" or "system" mean all those lands and waters which comprise the parks system of the State as established under this Article. (1987, c. 243, s. 1; 1989, c. 727, s. 218(50); 1989 (Reg. Sess., 1990), c. 1004, s. 19(b); 1997-443, s. 11A.119(a).)

§ 113-44.10. Powers of the Secretary.

The Secretary shall implement the provisions of this Article and shall be responsible for the administration of the State Parks System. (1987, c. 243.)

§ 113-44.11. Preparation of a System Plan.

- (a) The Secretary shall prepare and adopt a State Parks System Plan by December 31, 1988. The Plan, at a minimum, shall:
 - (1) Outline a method whereby the mission and purposes of the State Parks System as defined in G.S. 113-44.8 can be achieved in a reasonable, timely, and cost-effective manner;
 - (2) Evaluate existing parks against these standards to determine their statewide significance;
 - (3) Identify duplications and deficiencies in the current State Parks System and make recommendations for correction;
 - (4) Describe the resources of the existing State Parks System and their current uses, identify conflicts created by those uses, and propose solutions to them; and
 - (5) Describe anticipated trends in usage of the State Parks System, detail what impacts these trends may have on the State Parks System, and recommend means and methods to accommodate those trends successfully.
- (b) The Plan shall be developed with full public participation, including a series of public meetings held on adequate notice under rules which shall be adopted by the Secretary. The purpose of the public meetings and other public participation shall be to obtain from the public:
 - (1) Views and information on the needs of the public for recreational resources in the State Parks System;
 - (2) Views and information on the manner in which these needs should be addressed;
 - (3) Review of the draft plan prepared by the Secretary before he adopts the Plan.
- (c) The Secretary shall revise the Plan at intervals not exceeding five years. Revisions to the Plan shall be made consistent with and under the rules providing public participation in adoption of the Plan. (1987, c. 243.)

§ 113-44.12. Classification of parks resources.

After adopting the Plan, the Secretary shall identify and classify the major resources of each of the parks in the State Parks System, in order to establish the major purpose or purposes of each of the parks, consistent with the Plan and the purposes of this Article. (1987, c. 243.)

§ 113-44.13. General management plans.

Every park classified pursuant to G.S. 113-44.12 shall have a general management plan. The plan shall include a statement of purpose for the park based upon its relationship to the System Plan and its classification. An analysis of the major resources and facilities on hand to achieve those purposes shall be completed along with a statement of management direction. The general management plan shall be revised as necessary to comply with the System Plan and to achieve the purposes of this Article. (1987, c. 243.)

§ 113-44.14. Additions to and deletions from the State Parks System.

- (a) If, in the course of implementing G.S. 113-44.12 the Secretary determines that the major purposes of a park are not consistent with the purposes of this Article and the Plan, the Secretary may propose to the General Assembly the deletion of that park from the State Parks System. On a majority vote of each house of the General Assembly, the General Assembly may remove the park from the State Parks System. No other agency or governmental body of the State shall have the power to remove a park or any part from the State Parks System.
- (b) New parks shall be added to the State Parks System by the Department after authorization by the General Assembly. Each additional park shall be authorized only by an act of the General Assembly. Additions shall be consistent with and shall address the needs of the State Parks System as described in the Plan. All additions shall be accompanied by adequate authorization and appropriations for land acquisition, development, and operations. (1987, c. 243.)

Appendix D - Park History, pre-1979

From:

State of North Carolina, Department of Natural Resources and Community Development, Division of Parks and Recreation, Master Planning Unit. Master Plan: South Mountains State Park. pp. 4-5. January, 1979.

“The South Mountains Range is oriented 60 degrees north of east and includes parts of Burke, Cleveland, and Rutherford Counties. The area encompasses some 100,000 acres.

The mountains are thought to have served as a buffer zone separating the Cherokee and Catawba Indians. Prehistoric hunting and gathering groups probably established temporary camps on the summits of upland divides near streams, and main ridges above large valleys. However, the permanent agricultural villages were along the Catawba and First Broad Rivers. Very little archaeological information is available, and no habitation sites have been identified in the Park.

The first English, Welch, Scotch-Irish, and German settlers chose the fertile bottomland along the Catawba River. By the late 1700’s the population of the Burke County area was 2,100 with a few settlers on the fringe of the South Mountains.

The Dave [Bivens] family constructed a cornmill and home on the plateau above High Shoal Falls during this period. The mill was located at the top of the Falls, and the homesite was approximately 250 yards west on Jacob’s [*sic*] Fork. The foundation and chimney of the home remains; however, the mill has deteriorated completely over the years.

A second homesite was established by the Johnny Smith family at the present location of the park residence below High Shoals Falls. He and his wife’s grave are located next to the residence, however, nothing remains of the original house.

The 1828 gold rush at Brindleton prompted a tremendous population influx in the area. According to local history, Sam Martin discovered gold flakes and grains in the mud use to seal Bob Anderson’s log cabin. Martin borrowed a dishpan from Anderson’s

wife and panned more gold from a nearby stream. Anderson and Martin became partners, and within a year had mined \$40,000 worth of gold.

Prospecting and mining spread rapidly, mostly in the Brindleton and Silver Creek areas. According to early reports, more than one million dollars worth of gold were found. Many new people and wealthy slave holders were lured by the gold rush. By 1833, over 5,000 slaves were mining in addition to the thousands of individual prospectors. Brindleton, Brackettown, Huntsville, and Jamestown were several mining towns that developed overnight.

The bigger mining companies began moving out by 1834, although new immigrants and local residents continued to mine. Only 100 Burke County residents listed 'miner' as an occupation by 1850, and no company or individual was producing annual yields of gold in excess of \$500 by 1860.

The South Mountains area was settled by a few pioneers and immigrants from the gold rush. The soil was light and rich in humus in the broad valleys, and could be worked with flimsy tools and plows. New ground was cleared and fenced for planting and livestock.

Tobacco and corn were the primary agricultural crops, and hog farming was very popular. Most small farmers were very independent and depended little on the rest of the county for commodities. Therefore, the South Mountain area changed very little from the late 1800's to the early 1900's.

The first major opening of the park area came in the 1930's when Camp Dryer, a Civilian Conservation Corps camp, (C.C.C.) was established at Enola. Camp Dryer housed over 200 unemployed youths aged 18 to 25. They cleaned stream beds, constructed forest service roads, and built a forest observation tower on Horse Ridge in the Park. The Lower and Upper C.C.C. roads running through the Park are still maintained for fire protection.

Most of the undeveloped mountain land was owned by timber companies, primarily Wright-Bachman (16,480 acres) and Hutton and Bourbonnais (9,900 acres). Historically, these companies removed most of the merchantable timber from the mountains,

leaving the second and third growth forests that characterize the area today. In addition, the Town of Morganton, Broughton State Hospital and the State School for the deaf acquired land (4,500 acres, 3,000 acres, and 513 acres respectively) for water supply on the Henry Creek watershed in the South Mountains. Together these landowners formed the South Mountains Association to coordinate a fire protection program with the State Forestry Office.

A Recreation Study completed in April, 1941, by the NC Department of Conservation and Development indicated a need for a State Park in the Burke-Alexander-Caldwell County region, and a National Park Service Study conducted in coordination with the State recommended a site in the South Mountains on Henry Creek. A four-year park feasibility study resulted in an acquisition proposal to the 1945 General Assembly which was defeated, temporarily ending hope for a South Mountain State Park.

Through leasing agreements with private landowners, the North Carolina Wildlife Resources Commission (WRC) established the 11,560-acre South Mountains Wildlife Management Area in the early 1950's. They managed game populations for hunting and fishing. Trout streams were monitored and stocked, and wildlife fields for deer and wild turkeys were maintained during 20 years of management. However, most of the programs were dropped in the late 1960's. A checking station and residence [was] constructed at the old Johnny Smith homesite to monitor hunting activities, and with the cooperation of the NC Forest Service, the old C.C.C. roads were maintained and the old Horse Ridge fire tower was replaced with a new one at Benn Knob.

Ownership gradually changed in the Mountains. Champion International Company acquired much of the Hutton and Bourbonnais property and currently [in 1979] leases 4,690 acres to the WRC for a State Game land. Liberty Life Insurance Company purchased 9,344 acres and leased part of it for a second-home recreational development, Pine Mountain Lakes. The NC Division of State Parks eventually acquired 5,779 acres of Liberty Life's property establishing South Mountains State Park."

Appendix E - NC Division of Water Quality Stream Classification Description

Table 5 summarizes the NC Division of Water Quality stream classification for named tributaries within the park.

Class C - Waters protected for secondary recreation, fishing, wild-life, fish and aquatic life propagation and survival, agriculture and other uses suitable for Class C. Secondary recreation includes wading, boating, and other uses involving human body contact with water where such activities take place in an infrequent, unorganized, or incidental manner. There are no restrictions on watershed development or types of discharges.

Trout Waters (Tr) - Supplemental classification intended to protect freshwaters for natural trout propagation and survival of stocked trout. This designation affects wastewater quality but not the type of discharges and there are no watershed development restrictions except stream buffer zone requirements of NC Division of Land Resources. DWQ's classification is not the same as the NC Wildlife Resources Commission's Designated Public Mountain Trout Waters classification.

High Quality Waters (HQW) - Supplemental classification intended to protect waters with quality higher than state water quality standards. In general, there are two means by which a water body may be classified as *HQW*. They may be *HQW* by definition or they may qualify for *HQW* and then be supplementally classified as *HQW* through the rule-making process. The following are *HQW* by definition:

- *WS-I*,
- *WS-II*,
- *SA* (shellfishing),
- *ORW*,
- Waters designated as Primary Nursery Areas or other functional nursery areas by the Marine Fisheries Commission, or
- Native and special native (wild) trout waters as designated by the Wildlife Resources Commission.

Water Supply I (WS-I) - Waters used as sources of water supply for drinking, culinary, or food processing purposes for those users desiring maximum protection for their water supplies. These waters are also protected for Class C uses. *WS-I* waters are those within

Stream/Creek	Watershed	DWQ Class Within SOMO
Ivy Creek	Henry Fork	C Tr+
He Creek	Henry Fork	WS-I ORW → C ORW
Jerry Branch	Henry Fork	WS-I ORW → C ORW
Henry Fork	Henry Fork	WS-I ORW
Shinny Creek	Jacob Fork	WS-III Tr ORW
Jacob Fork	Jacob Fork	WS-III Tr ORW
Nettle Branch	Jacob Fork	WS-III Tr ORW
Murray Branch	Jacob Fork	WS-III Tr ORW
Little River	Jacob Fork	WS-III Tr ORW
Double Branch	Silver Creek	C
Shoal Creek	Silver Creek	C HQW
Bailey Fork	Silver Creek	C HQW
Clear Creek	Silver Creek	C HQW → C ORW

Table 5: NCDENR DWQ Classifications of South Mountains State Park's Surface Waters

natural and undeveloped watersheds in public ownership with no permitted point source (wastewater) discharges. All *WS-I* waters are *HQW* by definition.

Water Supply II (WS-II) - Waters used as sources of potable water where a *WS-I* classification is not feasible. These waters are also protected for Class C uses. *WS-II* waters are generally in predominantly undeveloped watersheds and only general permits for discharges are allowed. All *WS-II* waters are *HQW* by definition.

Water Supply III (WS-III) - Waters used as sources of potable water where a more protective *WS-I* or *II* classification is not feasible. These waters are also protected for Class C uses. *WS-III* waters are generally in low to moderately developed watersheds. General discharge permits only are allowed near the water supply intake whereas domestic and nonprocess industrial discharges are allowed in the rest of the water supply watershed.

Outstanding Resource Waters (ORW) - Supplemental classification intended to protect unique and special waters having excellent water quality and being of exceptional state or national ecological or recreational significance. To qualify, waters must be rated excellent

by the NC Division of Water Quality and have one of the following outstanding resource values:







- Outstanding fish habitat or fisheries,
- Unusually high level of waterbased recreation,
- Some special designation such as NC or National Wild/Scenic/Natural/Recreational River, National Wildlife Refuge, etc.,
- Important component of state or national park or forest, or
- Special ecological or scientific significance (rare or endangered species habitat, research or educational areas).

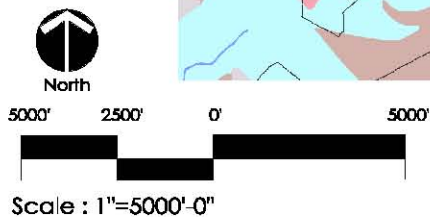
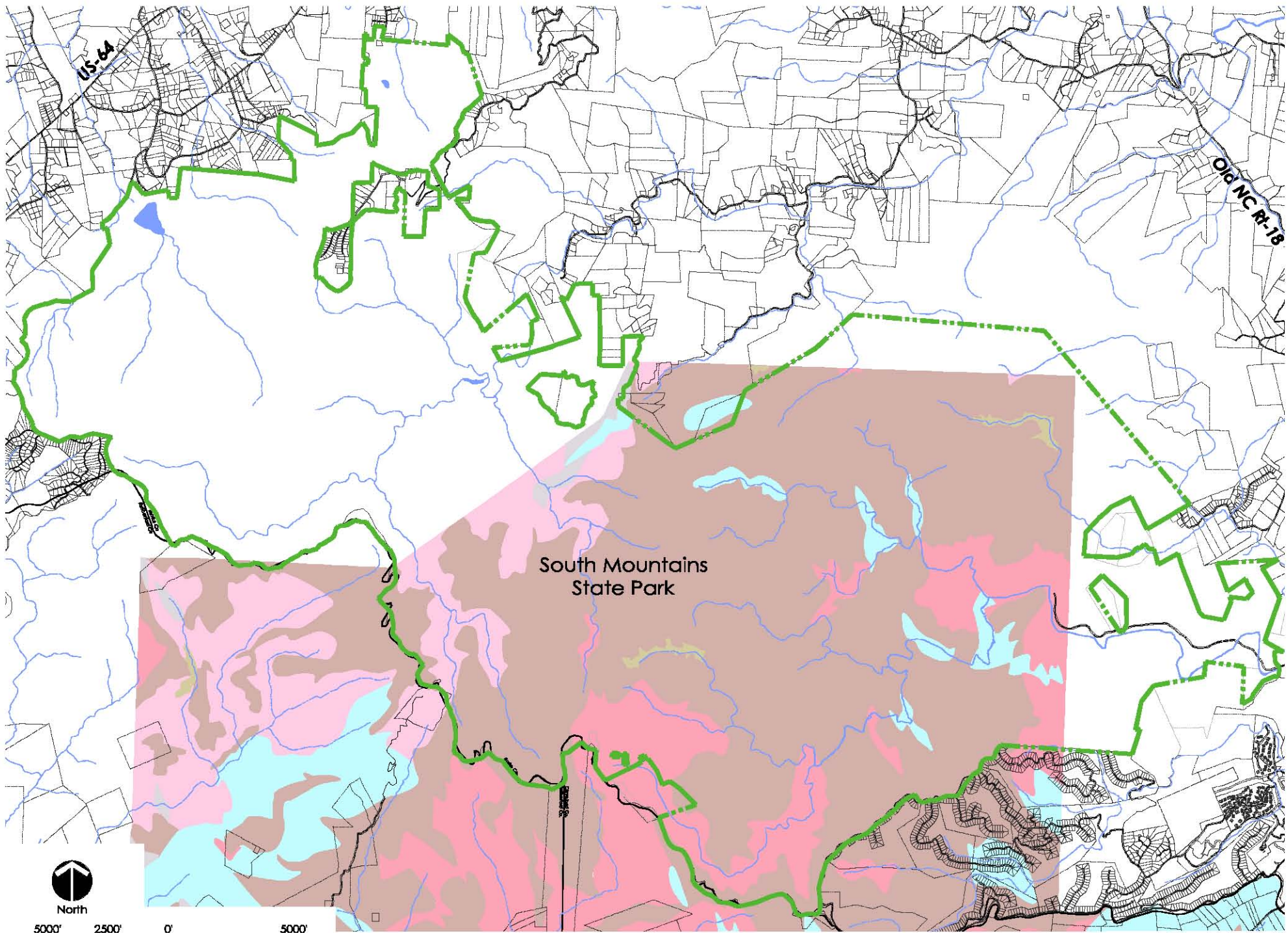
No new discharges or expansions of existing discharges shall be permitted. There are associated development controls enforced by the NC Division of Water Quality. *ORW* areas are *HQW* by definition.

Appendix F - Detailed Geology Data

The adjacent map represents data collected by Sarah Bier in the South Mountains Range for her University of Tennessee thesis in 2001 (*Bier, 2001*).

Map Legend

	Qal - Alluvium - Unconsolidated stream deposits of gravel, sand, silt, and clay.
	wtg - Walker Top orthogneiss - Granite to granodiorite, grey, massive, weakly foliated, porphyroblastic. Microcline megacrysts (18-35%) are often rimmed with myrmekite. Matrix is composed dominantly of fine- to medium-grained quartz (14-16%), biotite (13-22%), plagioclase (15-26% An25-35), microcline (5-18%), and minor amounts of muscovite (1-3%). Accessory minerals include garnet, zircon, apatite, and opaques.
	utf - Upper Tallulah Falls Formation - Metagraywacke-schist, light-gray to dark-gray, medium to fine-grained, massive- to thick-layered, well-foliated, commonly porphyroblastic. Major minerals are quartz (19-40%), plagioclase (16-32%, An20-30), biotite (32-38%), and muscovite (3-9%). Minor constituents are sillimanite, epidote, microcline, chlorite, and opaques. Layer thickness varies from a few millimeters to several meters. Foliation is defined by biotite and muscovite in the gneiss and schist. Biotite schist, granitic gneiss, and calc-silicate occur throughout the unit. Probably derived from feldspathic sandstone.
	ss - Tallulah Falls aluminous schist - Aluminous schist, light- to dark-silver-gray, inequigranular to porphyroblastic. Minerals include quartz (19-32%), plagioclase (6-15%, An20-30), muscovite (6-41%), sillimanite (16-42%), biotite (2-25%), and garnet (4-13%). Accessory minerals include chlorite, epidote, zircon, and opaques. Subhedral garnet porphyroblasts up to 4 mm in diameter occur in a fine-grained matrix. Weathers to grayish-red-purple saprolite. Probably derived from argillaceous rocks.
	lff - Lower Tallulah Falls Formation - Metagraywacke-biotite gneiss, light-gray to dark-gray, medium- to fine-grained, massive- to thick-layered, wellfoliated, commonly porphyroblastic. Major minerals include quartz (12-45%), plagioclase (22-36%, An45-55), biotite (15-26%), muscovite (1-19%), k-feldspar (<1-19%), and garnet (1-25%). Minor constituents include sillimanite, chlorite, and opaques. Muscovite-biotite schist, granitic gneiss, and amphibolite occur throughout the unit. Probably derived from feldspathic sandstone. (Description from Giorgis, 1999).
	tg - Toluca Granite - Granite, gray, gneissic, medium-grained, granoblastic. Major minerals include plagioclase (18-42%, An20-30), microcline (15-44%), quartz (17-25%), muscovite (2-22%), biotite (1-16%), and garnet (<1-4%). Accessory minerals include monazite, zircon, ilmenite, and rutile. Weathers to white and tan saprolite, and contains xenoliths of biotite gneiss (utf).



South Mountains State Park Geology

Sara Bier, Geology of the Southeastern South Mountains, North Carolina, August 2001

Appendix G - Terms and Conditions for Dedicated Nature Preserves

1. *Definitions:* As used in this allocation, the terms “natural area,” and “nature preserve” have the same meaning as contained in North Carolina General Statutes 113A-164.3.
2. *Dedication:* The Preserves, as described in this Allocation, are hereby dedicated as nature preserves for the purposes provided in the Nature Preserves Act.
3. *Primary Custodian:* The primary Custodian of the Preserves will be the Department of Environment and Natural Resources, Division of Parks and Recreation.
4. *Primary Classification:* The primary classification and purpose of the Preserves will be conservation, scientific research, passive recreation, and nature education.
5. *Rules for Management:*

A. *Character of Visitor Activity:* The principal activities in the Preserves shall be non-consumptive outdoor recreation and education in designated areas. These activities may be regulated by the Custodian to protect and conserve the natural values of the preserve.

Activities and uses unrelated to those listed above are prohibited except as provided in this Dedication or unless necessary to carry out the purposes of the Preserves. Prohibited activities include, but are not limited to, commercial development, commercial silviculture, agriculture and grazing, gathering of plants or plant products for purposes other than approved research, the removal, disturbance, molestation, or defacement of minerals, archaeological and natural resources, and those activities specifically restricted in this Dedication.

B. *Visitors and Visitor Facilities:* The Custodian reserves the right to orient and guide visitors for educational programs, scientific research, and Preserve management. Exhibits, programs and printed materials may be provided by the Custodian. The Custodian may create and maintain nature trails, overlooks, boardwalks, and primitive campsites adequate to promote the permitted use of the Preserves. Guardrails, fences, steps, bridges, and boardwalks may be provided when appropriate. The Custodian reserves the

right to erect structures necessary to protect the Preserves from unwanted or excessive visitor traffic and structures to restrict visitor access to sensitive environmental resources.

The Custodian may construct and maintain service roads for patrol, fire control, right-of-way maintenance, and other management activities. The Custodian may maintain roads presently existing within the Preserves. Otherwise, the construction of roads will be prohibited.

C. *Other Structures and Improvements:* Buildings or facilities other than those defined above shall not be erected by the Custodian within the Preserves.

D. *Research and Collecting Permits:* Any person wishing to engage in scientific research or collecting shall first secure written permission from the Custodian.

E. *Vehicles:* There will be no horseback riding or bicycling except on trails designated for these purposes and no use of any motorized vehicles except boats. The Custodian may use vehicles as necessary for the management of the Preserves.

F. *Excavation:* There will be no mining, drilling, removal of topsoil, sand, gravel, rock, minerals, or other material, nor any change in topography or surface hydrology of the Preserves.

G. *Water Level Control:* The purpose of water level control shall be to maintain the Preserves' natural water regimes. Water levels that have been altered by human activities may be changed, if necessary, to restore the Preserve to its natural condition. In a Preserve with a long history of managed hydrology, water levels may be managed to perpetuate the ecosystems that have evolved around the hydrology. Millponds are an example of situations in which water levels have been historically managed.

H. *Bringing in Flora and Fauna:* No exotic flora and no animals except leashed dogs and cats, horses on trails designated for horseback riding, or animals being reintroduced shall be brought into the Preserves. Any reintroduction will be of species native to the natural community and shall be done according to an approved resource management plan.

I. *Fire:* Use of prescribed burning is permitted as necessary for the biological management of the Preserves. Any prescribed burning must be done according to an approved fire management plan.

for the park unit in question. Fires are also permitted in conjunction with supervised activities of the Custodian, or in designated areas within primitive campsites.

J. Disturbance of Natural Features: The disturbance of other natural features is prohibited except for control of disease that would damage or reduce the significance of the Preserves, reduction of fire fuel load after severe storm damage, or for purposes of ecological management as stipulated in the Park unit's approved management plan and that which is consistent with the purposes of this Dedication.

K. Control of Populations (natural and exotic): Any control of animal or plant populations, other than fishing, shall be only to correct situations where populations have been significantly altered from natural conditions. The Custodian may, in accordance with an approved resource management plan, apply biological controls, herbicides and pesticides, and other means deemed necessary or appropriate to control or eradicate exotic or native species of plant or animal that are degrading the natural character of the Preserves.

L. Control of Natural Processes: Natural processes will be managed according to the policy of the North Carolina State Parks Natural Resource Management Policy. Generally, natural resources will be managed by allowing natural environments to evolve through natural processes with minimal influence from human activities. Exceptions are enumerated in the Policy Statement.

M. Management Plan: These rules for management constitute a management plan within the meaning of NCAC T15A.12H.Q401 until detailed plans for each park are prepared. The dedicated nature preserves will continue to be subject to other applicable regulations within NCAC Title T15A, chapter 12. Where contradictions may arise between this instrument of dedication and other management regulations, the terms of this Dedication shall take precedence.

6. Amendment, Modification, and Termination: Any changes to this Dedication must be made in accordance with the provisions of North Carolina General Statutes 113A-164.8, which require the approval of the Governor and the Council of State.

7. Permanent Plaque: The Custodian should display a permanent plaque or other appropriate marker at a prominent location in the office of the appropriate park unit.

Appendix H - Master Plan Staffing Requests

Traditionally with the construction of new facilities or the acquisition of land, new staff are hired to assist in supporting maintenance, operations and visitor use. The staffing requests shown below are based on levels needed to support the various types of planned uses in the Clear Creek Section and the Jacob Fork Section of the park.

Clear Creek Section

Facilities supported: Environmental Education Center, Day-use Picnic Area, Maintenance Area
Permanent staff: Environmental Education Director, Park Ranger I, Maintenance Mechanic IV
Seasonal staff: 2 General Utility Workers, Peak Load Office Assistant

Facilities supported: Group Cabins, Group Camp, Ranger Residence(s), Hike-in Campsites
Permanent staff: Maintenance Mechanic III, Environmental Education Assistant Director
Seasonal staff: 2 General Utility Workers, 4 Environmental Education Instructors

Facilities supported: Trail Construction/Improvements, Highway 64 Property Improvements (Equestrian Parking, Tent and Trailer Camping, Day-use/Picnic Area)
Permanent staff: Park Ranger I (only if a campground facility is constructed.)
Seasonal staff: General Utility Worker

Jacob Fork Section

Facilities supported: Maintenance Area, Picnic Area Expansion
Permanent staff: Maintenance Mechanic III

Facilities supported: Tent and Trailer Campground, Existing Campground Improvements, Equestrian Area Improvements, Visitor Center Picnic Area
Seasonal staff: 2 General Utility Workers

Appendix I - Park Office Building Inventory

Provided by Charles Brown Architect

Building 31-002, located within South Mountains State Park, formerly served as offices for the park rangers, visitor information and reception, and a workshop. Two metal portable storage sheds and a wood frame lean-to for storage are located adjacent to the former office/workshop building. The metal storage sheds are used for storage of ATVs, chain-saws, and other maintenance equipment. An above-ground gas tank is also located adjacent to the former park office/workshop. Current office and maintenance square footage is well below NC Division of Parks and Recreation standards. A new headquarters building and park visitor center was completed in late 2006, and a new maintenance facility will replace the functions currently in building 31-002. The former office and shop is located at the park's major parking area, serving most trail heads and day areas. Access to the building from the parking lots is by asphalt and concrete walks, but there are currently no ADA compliant routes into the building. It appears that the building was built in three phases. The original building was constructed in 1945 with subsequent additions for storage and a shop. The back office and restroom were added in 1996. The building footprint is L-shaped with the longest dimensions at 64' by 35'-8" (see attached plan). Primary entrances to the building are along the south façade.

A park building inventory was completed (by others) in 1997 and is partially included in this master plan under Building Inventory and Analysis. The intent of this assessment is general in nature. It is not a comprehensive evaluation of the building components and systems. The building is single-story construction, with approximately 1,580 heated square feet. The foundation appears to be spread concrete footings with CMU for the foundation walls to above-grade backfilled and concrete slab on grade. The exterior enclosure is a 2" by 4" wood frame construction at 16" on center, with painted plywood siding. Insulation type in the wall cavity and roof is unknown. The roof framing is 2" by 6" rafters at 24" on center and 1" by 4" purlins and a 5V crimp metal panel exposed fastener roofing. The metal panel roof appears to have received a galvanized coating. This likely indicates the original galvanized finish has deteriorated. If the building is renovated for any occupancy other than basic equipment storage, the roof should be replaced at that time.

The roll up overhead door serving the storage room provides on-grade access to the storage area. There is no direct exterior access into the shop

except for a 3'-0" door. The office area is separated from the storage shop area by an 8" CMU interior wall.

The L-shaped plan creates a somewhat hidden yard area north of the building. Portions of the exterior grade on the north side of the building are slightly above the interior finish floor, but there is no apparent water intrusion at this condition. A change in finish floor elevation occurs between storage and shop areas which has been retrofitted with a concrete ramp at the cased opening.

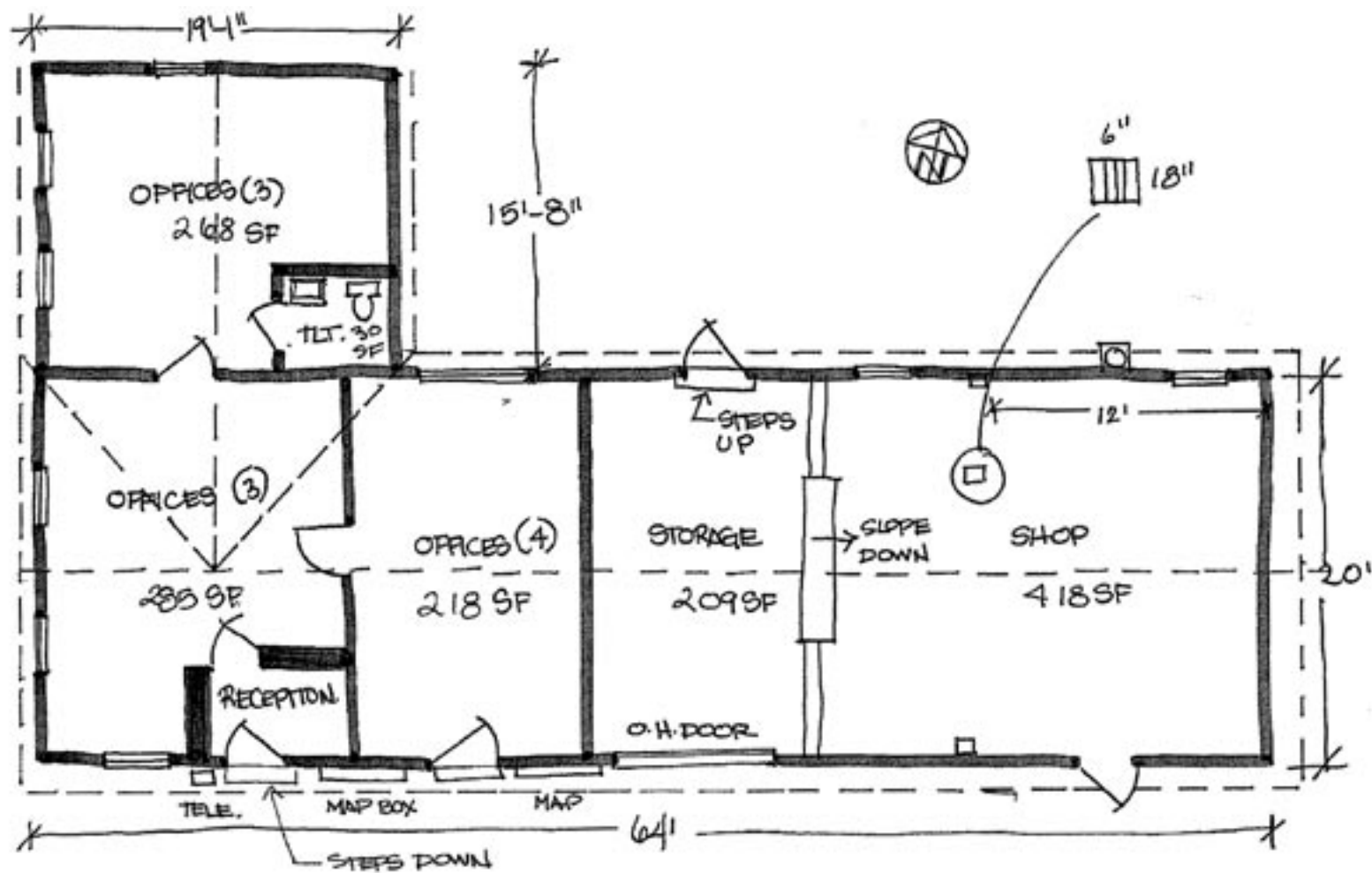
Overall, the former park office and workshop building appears to be structurally sound with no evidence of settling floors and walls. No significant irregularities are apparent in the roof line. All finishes need replacing.

The most economical use for this building with the offices moved out would be equipment storage as this would require minimum renovation. Proximity to trail heads makes ATV and rescue equipment storage a likely future use. It is recommended that the portable metal sheds be moved to the proposed maintenance facility.

The building location is suitable for a remote ranger station. Rehabilitation of the office area for public or office use, while feasible, will be more expensive. The interior finishes, windows and HVAC systems are in need of upgrading. All A/C is provided by window units. A second ADA toilet will be required for most occupancies and it is likely a new septic field/system is needed. Accessibility improvements will also be required. The building size meets the current code construction type appropriate for all occupancy types.

Interior ceiling height is 7'-4"+/- in office areas, 8'+/- in the shop area, and the ceiling is exposed in the storage room. Interior walls and ceiling are drywall and painted plywood. Flooring in the office and toilet areas is vinyl, whereas storage and shop areas have concrete slab on grade. Windows are double hung or awning and are single pane. The building is serviced by three window A/C units and two wall-mounted gas heaters. The shop and storage comprise approximately 680 square feet of space, the offices approximately 870 square feet, and the single unisex toilet 30 square feet.

No sampling or testing of materials for hazardous content is included in this report.



OFFICE AND SHOP

South Mountains Bldg 31-002

Scale 1/8" = 1'-0"